Formaldehyde Profiler Using Laser Induced Fluorescence Technique, Phase I

Completed Technology Project (2011 - 2011)

Project Introduction

Formaldehyde (HCHO) is of great interest to atmospheric scientists in NASA and other research institutions. In this SBIR project, we propose to build an airborne or ground based, atmospheric formaldehyde (HCHO) profiler implementing Laser Induced Fluorescence (LIF) techniques. The instrument will be able to operate under the range of environmental conditions encountered during ground and airborne tests. In the phase I effort, we will breadboard system and perform a proof of concept HCHO measurement. We will also carry out a comprehensive review of the UV laser systems and identify the optimum laser for the prototype sensor. The outcome of the Phase I work will establish the feasibility of this LIF technique for high sensitivity detection of HCHO, and provide the design of the prototype sensor.

Primary U.S. Work Locations and Key Partners

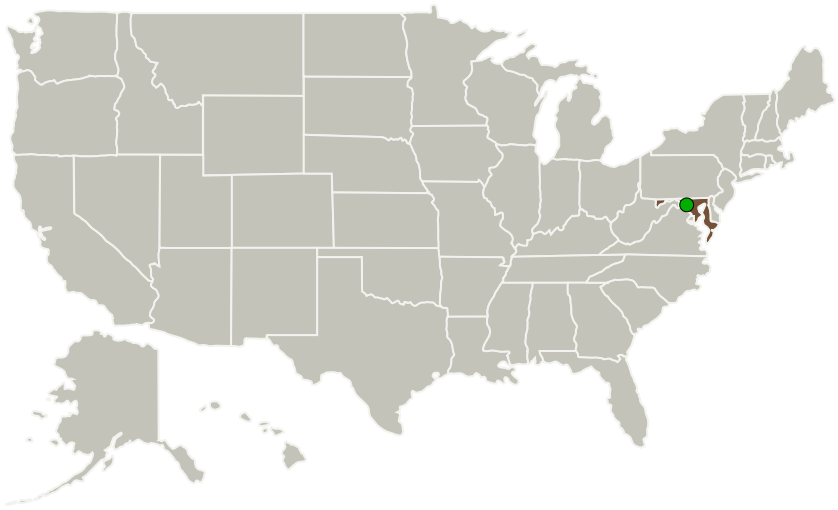

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Table of Contents

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Organizations Performing Work	Role	Type	Location
Masstech, Inc.	Lead Organization	Industry Small Disadvantaged Business (SDB), Minority-Owned Business	Columbia, Maryland
Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland

Primary U.S. Work Locations
Maryland

Project Transitions

February 2011: Project Start

September 2011: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/140199)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Masstech, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Guangkun Li

Co-Investigator:

Guangkun Li

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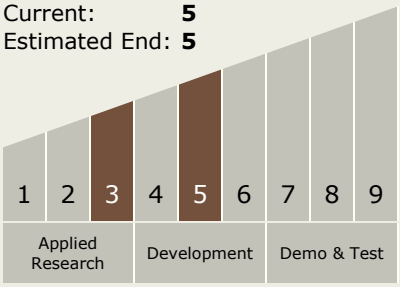
Technology Maturity (TRL)

Start: **3**
Current: **5**
Estimated End: **5**



Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.2 Observatories
    - TX08.2.1 Mirror Systems

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System